

Appl. No. 10/016,853
Amdt. Dated October 12, 2004
Reply to Office action of July 14, 2004
Attorney Docket No. P14738-US1
EUS/J/P/04-2132

REMARKS/ARGUMENTS

1.) Claim Amendments

The Applicants have amended claim 1. The amendments to claim 1 were made to make explicit the steps performed by the MSC, as expressly provided in claims 5, 9 and 13; no new matter has been added. Claims 1-16 remain pending in the application. Favorable reconsideration of the application is respectfully requested in view of the foregoing amendments and the following remarks.

2.) Claim Rejections – 35 U.S.C. §103(a)

The Examiner rejected claims 1, 5, 9 and 13 as being unpatentable over Salin (US 5,400,390) in view of Mouly, *et al.* (The GSM System for Mobile Communications, 1992, Chapter 7.2 "Security Management," pp 477-492, hereinafter Mouly); and claims 2-4, 6-8, 10-12 and 14-16 as being unpatentable over Salin and Mouly, and further in view of Grootwassink, (US 6,725,037). The Applicants traverse the rejections.

With respect to claims 1, 5, 9 and 13, the Examiner recognizes that Salin fails to disclose "transmitting an authentication code along with the roaming number between the HLR, GMSC and MSC . . . However the procedure of authenticating an incoming call is well known in the art via the GSM specification as mentioned by Salin (column 5; lines 23-27), and disclosed by Mouly." The procedure of authentication referred to by Salin, however, is for the B subscriber (*i.e.*, the called party Mobile Station), and is carried out between the B subscriber Mobile Station and the Visitor Location Register (VLR) of the MSC currently serving the Mobile Station. In contrast, the authentication code utilized in Applicants' invention is not used to authenticate a called party Mobile Station, but is used to prevent the unauthorized use of roaming numbers. The invention embodies a process by which it can be assured that a call to a roaming number associated with an MSC is not simply a direct call to the roaming number, but is in fact a call to a B subscriber Mobile Station to which the MSC can assign the roaming number.

To overcome the deficiencies of Salin, the Examiner states that "Mouly discloses authentication in a telecommunications network during call setup including sending an authentication request from the MSC to the mobile station, and sending an

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authentication response from the mobile station." As noted previously, however, the Applicants' invention is not related to authentication of a mobile station, but is used to prevent the unauthorized use of roaming numbers.

Claim 1 recites:

1. A method for preventing unauthorized use of roaming numbers in a wireless telecommunications system, said method comprising the steps of:
receiving a call request for a mobile terminal at a Gateway Mobile Switching Center (GMSC);
sending a request for routing information from said GMSC to a Home Location Register (HLR) associated with said mobile terminal;
sending a request for a roaming number from said HLR to the Mobile Switching Center (MSC) associated with the roaming area in which said mobile terminal is geographically located;
allocating, by said MSC, a roaming number for said mobile terminal;
assigning, by said MSC, an authentication code to said roaming number;
sending a response to said request for roaming number from said MSC to said HLR, said response including said roaming number and said authentication code;
receiving said roaming number and said authentication code at said HLR;
sending said roaming number and said authentication code from said HLR to said GMSC;
sending a call setup request from said GMSC to said MSC, said call setup request including said roaming number and said authentication code;
confirming, by said MSC, said authentication code in said call setup request; and,
if said authentication code for said roaming number is confirmed by said MSC, completing said call request to said mobile terminal. (emphasis added)

Salin and Mouly fail to disclose, either individually or in combination, each and every limitation of claim 1. In particular, the Examiner has pointed to no teaching wherein: 1) an MSC assigns an authentication code to a roaming number, 2) an MSC sends a response to a request for a roaming number to an HLR, wherein the response includes a roaming number and an authentication code for that roaming number, 3) an HLR

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sends a roaming number and an authentication code for that roaming number to a GMSC, 4) a call setup request is sent from a GMSC to an MSC, wherein the call setup request includes a roaming number assigned by that MSC and the authentication code for that roaming number, or 5) confirming by the MSC the authentication code in the call setup request and, if the authentication code for the roaming number is confirmed by the MSC, completing the call request to the mobile terminal. Accordingly, the Examiner has not established a *prima facie* case of obvious of claim 1 in view of Salin and Mouly.

Whereas claims 5, 9 and 13 include limitations analogous to those of claim 1, those claims are also not obvious in view of Salin and Mouly. Furthermore, whereas claims 2-4, 6-8, 10-12 and 14-16 are dependent from claims 1, 5, 9 and 13, respectively, and include the limitations thereof, those claims are also not obvious.

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CONCLUSION

In view of the foregoing amendments and remarks, the Applicants believe all of the claims currently pending in the Application to be in a condition for allowance. The Applicants, therefore, respectfully request that the Examiner withdraw all rejections and issue a Notice of Allowance for claims 1-16.

The Applicants request a telephonic interview if the Examiner has any questions or requires any additional information that would further or expedite the prosecution of the Application.

Respectfully submitted,



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Date: October 12, 2004

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